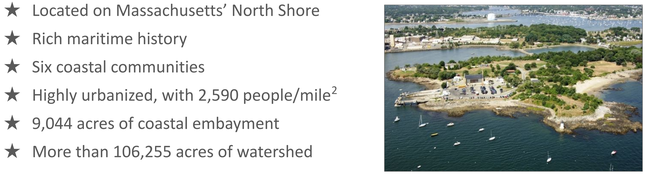
From estuarine monitoring to habitat restoration, building resilience in Salem Sound is a priority in an effort to turn back time

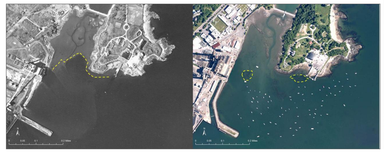
Welcome to Salem Sound!

- ★ Located on Massachusetts' North Shore
- ★ Rich maritime history
- ★ Six coastal communities
- ★ Highly urbanized, with 2,590 people/mile^2
- ★ 9,044 acres of coastal embayment
- ★ More than 106,255 acres of watershed

Salem Sound has always been a hub of activity, characterized by urban harbors and industrialized riverfronts. The result is loss of important habitats and degraded water quality.



Aerial view of Salem Sound, MA.



Aerial imagery of Cat Cove, Salem Harbor from 1954 (DOT) and 2012 (DEP) showing approximate eelgrass edge (yellow). Source: Carr & Ford, 2017.

Collins Cove suffered habitat loss from erosion. Source: SSCW.

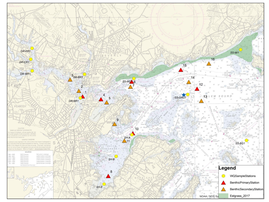
Causes of habitat loss and poor water quality in Salem Sound

- ★ Wastewater outfalls
- ★ Marinas and mooring fields
- ★ Erosion
- ★ Riverine discharge
- ★ Stormwater and nutrient runoff

South Essex Sewage Discharge Plant in Salem Harbor. Source: The Salem News

Monitoring water quality in Salem Sound to inform decision making

In 2019-2020 we collected water samples from 12 stations and looked at the organisms living in sediments at 7 other stations. Stations were in the Danvers River, near the wastewater treatment plant outfalls, over eelgrass areas, and in Salem Harbor.



Map showing sampling station locations. Water - yellow circles; Sediment - red triangles; Star - South Essex Sewer District discharge

Initial results confirm:

- ★ Rivers discharge pollutants into open waters.
- ★ Seasons, tides, and weather impact estuaries and the animals that live there.
- ★ Wastewater treatment plants may not be wholly responsible.

Tailored monitoring programs will help us get a clearer picture of what is really going on in the system. We need this information to plan and rebuild resilient habitats.

Salem Sound's ports and harbors are home to thousands of moorings, often causing scouring and eelgrass loss. Source: CZM.

Why it Matters

Estuarine habitats, such as salt marshes and eelgrass, are home to thousands of species including commercially important fisheries on which many communities depend for their well-being. Monitoring water quality is a necessary first step to identify a problem, but it is only the first step. With this information, communities can take action and realize the benefits: sustainable ecosystems that support recreation, provide food, and protect us from storms.

What You Can Do

Join Salem Sound Coastwatch's dedicated volunteers to help with monitoring. Each year many volunteers receive training and participate in monitoring, restoration, beach cleanups and other efforts to bring back the Sound.

Massachusetts Bays NATIONAL ESTUARY PARTNERSHIP

Massachusetts Office of Coastal Zone Management

Salem Sound COASTWATCH

Scan to see other Salem Sound monitoring efforts